equipment until June 1995, when Sony shipped its first 18-inch dish systems.[124] The DSS equipment includes the receiving dish, digital receiver and remote control unit. The RCA list price for the basic DSS receiving equipment is $699.[125] Subscribers either pay $100 to $200 for professional installation or purchase the installation equipment for $69.95.[126] The basic DSS unit allows a subscribing household to watch one channel at a time. In order to view different channels simultaneously on different television sets, a subscriber must purchase a DSS unit for $899 and then also purchase a $649 decoder for the second television set.[127]

54. Starting in May 1995, Sony was licensed to produce the DSS equipment for the next six months as the sole competitor to Thomson.[128] Sony made its first shipments in June 1995,[129] pricing its basic model at $749.[130] Retailers have been offering Sony's basic model for $699,[131] and RCA's receiving system is now available for $597.[132] The price of DSS receiving equipment is expected to drop further as other manufacturers enter the market.[133] Hughes Network Systems plans to begin selling the equipment in early 1996, Uniden in mid-1996, and Toshiba in mid-1996.[134]

55. DIRECTV now offers its customers a financing plan for DSS receiving equipment. The financing plan is available through consumer electronics dealers in both rural

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[124] *DTH Closes in on Four Million*, SkyREPORT, Oct. 1994 at 20; *The DBS Battleground: Jockeying for Position & Paying the Piper*, SkyREPORT, June 1995 at 8; Paul Farhi, *Dishing Up the Business Gets Tougher*, Washington Post, Sept. 6, 1995 at G1, G3; *May C-Band Equipment Sales Rebound; But Questions About Industry's Future Remain*, SkyREPORT, Jul. 1995, at 3.

[125] *The DBS Battleground, supra,* at 10.

[126] *1994 Report,* 9 FCC Rcd at 7475 ¶ 65.

[127] *Id.*

[128] *The DBS Battleground, supra,* at 8.

[129] *May C-Band Equipment Sales, supra,* at 3.

[130] *The DBS Battleground, supra,* at 8.

[131] Although technical problems with some Sony systems were reported in August 1995, it has also been reported that the company hopes to fix the problems using a code sent through a DSS satellite. *A Cure for Red Ink?*, SkyREPORT, Sept. 1995, at 4.

[132] *See, e.g.,* Washington Post, Nov. 10, 1995, at A21.

[133] *The DBS Battleground, supra,* at 10; DIRECTV Comments at 8.

[134] *DSS: The Price of Things to Come*, SkyREPORT, June 1995, at 10.

and urban areas. Under the plan, DIRECTV subscribers make equipment payments of $15 per month for 48 months, in addition to their payments for programming packages. The total monthly charge for receiving equipment and programming ranges from about $27 to $45, depending on the programming package chosen.[135]

56. Primestar subscribers can lease receiving equipment through a network of more than 400 local distributors, at a total price for equipment and basic programming of about $1 per day,[136] after payment of a $299 installation charge.[137] Leasing enables subscribers to reduce the large initial expenditure for receiving equipment. In addition, Primestar offers to maintain the subscriber's receiving equipment, and upgrade it to prevent obsolescence as DBS technology advances.

57. *Limitations on DBS Services.* The number of high powered DBS services in the United States is limited because the Ku-band spectrum that is needed to provide these services is limited by international treaty. Only eight orbital positions have been allocated to serve the United States. At each of the eight orbital locations, the spectrum is fully distributed among the 32 available channels.[138] Further, it appears that at most four of the eight orbital locations can be used to provide service to all 48 contiguous states, although the Commission recognizes that this number may increase in the future.[139] In addition, DBS dishes are not generally equipped to receive signals from different orbital locations. Therefore, when creating packages of video programming, DBS service providers are effectively limited to the use of those frequencies for which they hold permits at a given orbital location.

58. According to Primestar, DBS service is subject to another limitation.[140] Primestar contends that its inability to transmit of local broadcast network affiliate programming to most of its subscribers inhibits the ability of DBS services to become effective competitors to cable. To offset this disadvantage, DIRECTV provides its subscribers with a remote controlled A-B switch to obtain local broadcast signals over a broadcast

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[135] Joe Estrella, *DIRECTV to Offer New Financing Program for DSS*, Multichannel News, Aug. 14, 1995, at 28.

[136] Primestar Comments at 3.

[137] Primestar Partners, *News Release*, June 1995.

[138] *See, e.g., Inquiry into the Development of Regulatory Policy in Regard to Direct Broadcast Satellites*, Report & Order, 90 FCC 2d 676 (1982).

[139] *Revision of Rules and Policies for the DBS Service*, Notice of Proposed Rulemaking, IB Docket No. 95-168, __ FCC Rcd ____, FCC 95-443 (Oct. 30, 1995) ("*DBS Auction NPRM*").

[140] Primestar Comments at 6.

television antenna.[141] DIRECTV also has proposed that cable operators be required to offer a "closed basic tier" consisting only of local broadcast, public, educational, and governmental channels, which would give consumers the option of buying basic programming from a cable operator and satellite programming from DIRECTV.[142] On the other hand, DBS systems provide subscribers with service attributes that are not generally available on cable systems at present, such as digital video and sound.[143] DBS systems also offer subscribers programming not available on most cable systems. For example, DIRECTV subscribers can receive nearly all of the games in the schedules of the National Football League, National Basketball Association or National Hockey League for $139 per season.[144]

59. *Proposed Use of DBS Facilities to Provide Programming to MVPDs.* TCI has proposed to offer a "headend in the sky" ("HITS") service, which apparently would involve the provision of authorization services and the distribution of Primestar's programming to MVPDs.[145] The subscribing MVPDs could then combine HITS service with local broadcast channels and transmit the programming package over the MVPDs' networks to their subscribers, who would use set top boxes to receive the service.[146] It has been reported that Primestar has signed an $80 million agreement to use HITS.[147] In filings with the Commission, other DBS operators, such as DIRECTV and EchoStar, have suggested that they may also use their DBS facilities to provide service to MVPDs.[148]

60. *Planned Migration to High Power DBS.* Primestar has been planning to migrate its DBS service from the satellite it is now using to a high power DBS satellite and expand its capacity to 94 video and audio channels.[149] For its new service, Primestar was planning to use construction permits that had been held by Advanced Communication Corporation (ACC).

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[141] DIRECTV Comments at 7.

[142] Ted Hearn, *FCC Hopes to Get Another Shot At Basic Rates*, Multichannel News, Oct. 2, 1995, at 32.

[143] SBCA Comments at 6.

[144] DIRECTV Programming Lineup brochure, Aug.1, 1995.

[145] Tom Kerver, *Riding on the Headend in the Sky*, Cablevision, Mar. 14, 1994, at 38

[146] *Id.* at 40.

[147] *$80 Million DBS Deal*, Electronic Media, Jun. 27, 1994, at 1-2.

[148] Echostar Opposition, at 41, *Advanced Communications Corp. (Application for Extension of Time)*, File No. DBS-94-11-E (June 6, 1995); DIRECTV Opposition, at 23, *Advanced Communications Corp. (Application for Extension of Time)*, File No. DBS-94-11-E (June 6, 1995).

[149] *Primestar Adds Viacom Services*, Multichannel News, Aug. 7, 1995, at 14.

ACC had agreed to sell the permits to Tempo DBS, Inc. ("Tempo"), an affiliate of TCI.[150] In a decision by the International Bureau, which the Commission has affirmed, ACC's application to extend its permit was denied because ACC failed to exercise due diligence in constructing its DBS system, and the application for assignment of the ACC permit to Tempo consequently was denied as moot.[151] The Commission recently proposed auctioning the channels reclaimed from the former ACC construction permits.[152]

2. Home Satellite Dishes

61. HSD owners have access to more than 400 channels of programming placed on C-band satellites by programmers for receipt and distribution by MVPDs, of which 115 are scrambled and approximately 285 are unscrambled.[153] HSD owners can watch the unscrambled channels without paying a subscription fee. To receive scrambled channels, however, an HSD owner must purchase an integrated receiver-decoder ("IRD") from an equipment dealer and pay a subscription fee to an HSD programming packager. Nationwide, approximately thirty program packagers offer packages of scrambled channels to HSD owners.[154] Like DBS systems, however, HSD program packagers do not provide local broadcast network affiliate channels, which are generally not available on C-Band satellites.

62. It has proven difficult to obtain accurate estimates of the total number of HSD users, which includes: (1) viewers who subscribe to a packaged programming service, (2) viewers who receive satellite programming services illegally without subscribing, and (3) viewers who receive only non-subscription programming. As of October 1994, the estimates of total HSD users ranged from 2.3 million to 4.5 million.[155] It is estimated that there were approximately 2.2 million subscribers to packaged HSD programming services in 1994.[156] Based on this information and reports that almost all recent buyers of HSD systems

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[150] *See, e.g., Advanced Communications Corp. (Application for Extension of Time)*, Memorandum Opinion & Order, File No. DBS-94-11-EXT, 10 FCC Rcd ____, DA 95-944 (Apr. 27, 1995), *aff'd*, FCC 95-428 (Oct. 18, 1995), *appeal docketed, Advanced Communications Corp. v. FCC*, No. 95-551 (D.C. Cir. Oct. 31, 1995).

[151] *Id.*

[152] *DBS Auction NPRM*, __ FCC Rcd ____, FCC 95-443.

[153] *1994 Report*, 9 FCC Rcd at 7478-79 ¶ 71; *Crowded Skies?* SkyTRENDS DTH Annual Report, Apr. 1995, at 18-19.

[154] SCBA Comments at 4.

[155] *The 2.3, 3.0, 3.3, 3.9, 4.5 Million Question: How Many DTH Households Are Out There Anyway?* SkyREPORT, Oct. 1994, at 1.

[156] *Infra* Appendix G, Table 1.

are choosing to subscribe to a programming service,[157] SBCA estimated that there were between 3.5 million and 4 million HSD users at that time.[158]

63. Mirroring the success of DBS service in 1994,[159] HSD users increased by more than 640,000, a record number. The number of subscribers to packaged programming services for HSDs increased from about 1.6 million in 1993 to approximately 2.2 million in 1994.[160] The HSD industry's expansion occurred despite severe module shortages, which may have caused sales in September and October 1994 to drop significantly from the all-time high of 90,905 units shipped in August 1994.[161]

64. HSD system use has grown more slowly in 1995 than it did in 1994. Only 222,000 HSD systems were shipped through August of this year compared with 436,100 systems shipped during the same period in 1994.[162] Similarly, the number of subscribers to HSD packaged programming services grew only from approximately 2.2 million in 1994 to about 2.3 million in 1995.[163] Channel Master, a major HSD manufacturer, has predicted that growth in HSD purchases will level off to 15,000 to 20,000 new systems per month, as competition from DBS systems takes subscribers away from HSD.[164]

65. Several factors may influence the future growth rate of HSD system use. On the one hand, HSD services currently offer more programming options than any other video delivery system. However, as other video providers such as DIRECTV and Primestar increase channel capacity and improve programming selections, they may begin to provide comparable programming choices.[165] On the other hand, HSD receiving equipment is more expensive than the receiving equipment for other video distributors. Consumers pay an average of

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[157] *Why Do People Buy?*, SkyREPORT, First Quarter 1994, at 10, 11.

[158] *Id.*

[159] It was widely reported that the launch of DBS service resulted in increased sales of C-band equipment. *E.g., Early DSS Market Ranks #1 in C-Band Growth*, SkyREPORT, Jan. 1995, at 8-9.

[160] *Infra* Appendix G, Table 1.

[161] *Module Shortages Slash Factory Sales*, SkyREPORT, Nov. 1994, at 6-7.

[162] *DTH Equipment & Subs, supra*, at 10-11.

[163] *Infra* Appendix G, Table 1.

[164] *May C-Band Equipment Sales Rebound; But Questions About Industry's Future Remain*, SkyREPORT, July 1995, at 2-3.

[165] *See* Bilotti, Nabi & Takada, *supra*, at 12.

$2,000 to $2,300 for a complete HSD system,[166] which is significantly greater than the equipment cost of a DBS system. To decrease this cost differential, General Instrument Corporation, Inc. ("GIC"), a major manufacturer of HSD equipment, recently announced its intention to discount the wholesale prices for the HSD system hardware and IRDs.[167] In addition, HSD viewers often experience a delay of several seconds when changing channels if the selected channel is on a different satellite than the prior channel. In order to receive the selected channel, the dish must rotate to face the location of its satellite. Viewers of other MVPD's service do not experience similar delays when changing channels

66. The growth rates of both HSD and DBS services also may be affected by zoning ordinances that many localities have enacted, which restrict the deployment of receiving dishes.[168] SBCA cites zoning ordinances and other local restrictions as a significant impediment to the growth of HSD.[169] Although the Commission has preempted zoning ordinances that either discriminate against receiving equipment without "a reasonable and clearly defined health, safety or aesthetic objective," or impose "unreasonable limitations" on the use of satellite dishes,[170] SBCA alleges that local authorities continue to enact ordinances that violate these rules.[171] SBCA has also contended that homeowners' associations use covenants and other restrictions to prohibit HSDs.[172]

67. In response to complaints about local restrictions on receiving equipment, we initiated a rulemaking proceeding to modify its zoning preemption rules.[173] To clarify its rules, the Commission proposes a rebuttable presumption against local laws and regulations that restrict relatively small receiving dishes. We also propose procedures by which Commission review of zoning disputes occurs after exhaustion of local administrative remedies.[174] This is a change from previous policy which required exhaustion of all legal

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[166] *Direct-to-Home Industry at a Glance*, SkyREPORT, Sept. 1995, at 9.

[167] *Numbers Down, Spirits High*, SkyREPORT, Sept. 1995, at 11.

[168] *See, e.g., Preemption of Local Zoning Regulation of Satellite Earth Stations*, Notice of Proposed Rulemaking, IB Docket No. 95-59, 10 FCC Rcd 6982 (1995) ("*Local Zoning NPRM*").

[169] SBCA Comments at 18.

[170] 47 C.F.R. § 25.104.

[171] SBCA Comments at 18.

[172] *1994 Report*, 9 FCC Rcd at 7481 ¶ 76.

[173] *Local Zoning NPRM*, 10 FCC Rcd at 6995 ¶ 44.

[174] *See, e.g., Town of Deerfield, New York v. FCC*, 992 F.2d 420 (2d Cir. 1992) (where the court invalidated the Commission's stricter exhaustion policy).

remedies before appeal to the Commission. The Commission is reviewing the comments that were filed in response to the proposals and will adopt a final rule in the near future.

C. Wireless Cable Systems

1. Multichannel Multipoint Distribution Service

68. MVPDs that use microwave frequencies in the multichannel multipoint distribution service ("MMDS") or multipoint distribution service ("MDS") to transmit video programming to subscribers with rooftop antennas are commonly referred to as wireless cable systems. Wireless cable operators have access to a maximum of thirty-two or thirty-three channels and currently use traditional analog transmission technologies. The thirty-three channels include twenty channels allocated to Instructional Television Fixed Service ("ITFS") that are leased on a part-time basis.

69. *Subscribership.* Between the end of 1993 and the end of 1994, the total number of subscribers to wireless cable systems increased by 51%, from 397,000 to 600,000 subscribers.[175] During the same time period, the number of homes capable of receiving a wireless cable operator's signal (commonly referred to as homes seen) rose by 10% to over 27 million homes. The growth of subscribership relative to homes seen has pushed the industry's penetration rate from 1.6% at the end of 1993 to 2.2% at the end of 1994. Apparently, this trend has continued in 1995, as reported by the Wireless Cable Association International, Inc. ("WCAI"), which claims that in June 1995 the industry was comprised of approximately 190 systems serving about 800,000 subscribers.[176]

70. Although few wireless cable systems approach the total size of their wired cable counterparts, the industry has 15 systems with at least 12,000 subscribers, including 7 with over 20,000 subscribers. The largest wireless system, operated by CAI Wireless Systems, Inc. ("CAI") in Philadelphia, Pennsylvania, has approximately 51,900 subscribers[177] (3.3% of the approximately 1.5 million homes capable of subscribing to CAI's service).[178] The second largest is Cross Country Wireless, Inc.'s ("Cross Country") system in Riverside,

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[175] Paul Kagan Assocs., Inc., *The 1995 Wireless Cable Databook* 23 (1995) (*"1995 Wireless Cable Databook"*).

[176] This figure represents 45% growth from WCAI's estimate of 550,000 subscribers being served by the wireless cable industry in June 1994. WCAI Comments at 2.

[177] James B. Boyle & Andrew W. Marcus, CFA, Alex. Brown & Sons (Media), Wireless Cable Sight-Lines, Aug. 21, 1995, at 5.

[178] Gerard Klauer Mattison & Co., *When It Comes To The Wireless Industry, One Investment Bank Sends The Right Signals* 54 ("Seminal Event In Evolution of Wireless Cable Industry") (July 1995) (Handout distributed at WCAI's WCA '95: Wireless Cable's Annual Convention & Exposition and available from author) (*"1995 GKM Databook"*).

California, which has approximately 42,000 subscribers[179] (10.8% of the homes capable of subscribing).[180] In general, where a wireless system is competing with an incumbent wired cable system, the wired cable system has substantially greater subscribership. There are only 12 systems with penetration rates over 10%, and we are aware of only one system, operated by Heartland Wireless Communications, Inc. ("Heartland") in Ada, Oklahoma (serving 28.1% of the homes seen)[181] that has more subscribers than its wired competitor.[182]

71. Analysts expect the wireless industry's recent subscriber growth to continue for the next several years. Paul Kagan Associates projects that the industry will grow by over 60% in both 1995 and 1996, and should serve over two million subscribers sometime in 1997,[183] which is still only a fraction of the wired cable industry's 59.7 million subscribers at the end of 1994.[184] Another observer projects that the industry's average annual subscribership will grow by over 280% between 1995 and 1998.[185] Commenters have attributed this growth to a combination of price competition, product differentiation, favorable regulatory actions and increased investments by the LECs.[186]

72. *Consolidation.* Several large operators have begun to consolidate systems in major markets across the country. After its acquisition of ACS Enterprises, Inc. ("ACS") and the purchase of systems from Eastern Cable Networks Corporation ("ECN") and American Wireless Systems, Inc. ("AWS"), CAI operates in most of the largest markets in the Northeast, and has line-of-sight coverage of over 11 million homes. Its Northeast holdings cover the following markets: New York City, Philadelphia, Pittsburgh, Washington, D.C.,

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[179] Wireless Cable Sight-Lines, *supra*, at 2.

[180] Wireless Cable Sight-Lines, *supra*, at 5. As discussed below, significant developments this year in the wireless cable industry included the investment by Bell Atlantic and NYNEX in CAI and the acquisition of Cross Country by the Pacific Telesis Group ("PacBell" which refers to both the Pacific Telesis Group and Pacific Bell, a subsidiary of Pacific Telesis Group, unless otherwise noted).

[181] Wireless Cable Sight-Lines, *supra*, at 2.

[182] Wireless Cable Sight-Lines, *supra*, at 1.

[183] *1995 Wireless Cable Databook*, *supra*, at 23.

[184] *Infra* Appendix B, Table 1.

[185] James B. Boyle & Andrew W. Marcus, CFA, Alex. Brown & Sons (Media), Wireless Cable Overview, Mar. 23, 1995, at 31.

[186] HBO Comments at 4; WCAI Comments at 7, n.14; NCTA Comments at 14-15.

Baltimore and Boston.[187] People's Choice TV Corporation ("PCTV") has two regional clusters, one in the Midwest and the other in the Southwest. With its acquisition of Preferred Entertainment, Inc. ("Preferred") and the purchase of systems from ECN, PCTV's Midwest cluster encompasses systems in Chicago, Detroit, Milwaukee, Indianapolis, Kansas City and St. Louis. PCTV's southwestern cluster includes systems in Houston, Phoenix and Tucson. Between these two clusters, PCTV has a total of almost 8 million line-of-sight homes.[188]

73. *Digital Trials.* According to reports, the Wireless Cable Digital Alliance ("WCDA")[189] completed the first field trials of digital technology in Colorado Springs and Chicago in the spring of 1995, which yielded several important results. First, it has been reported that wireless operators should be able to fit three[190] to nine[191] digital channels into one 6 MHz video channel by combining a digital signal with compression algorithms, which is comparable to the results achieved by other MVPDs. Second, it has been reported that use of a digital signal increased the coverage area of a wireless transmitter, allowing MMDS operators to reach additional homes that were previously unable to receive a clear signal.[192]

74. Upon receipt of Commission approval, WCDA's continued development of a digital wireless cable system will begin this fall when American Telecasting, Inc. ("American Telecasting") will conduct a commercial trial involving 50 homes.[193] Operators with systems in urban markets have said that they hope to deploy digital systems by the second half of 1996.[194]

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[187] *1995 GKM Databook*, at 54 ("Seminal Event In Evolution of Wireless Cable Industry").

[188] *1995 GKM Databook*, at 77 ("People's Choice - TV").

[189] The WCDA's membership includes: American Telecasting Inc., Andrew Corp., California Amplifier, EMCEE Broadcast Products, Microwave Filter Corp., and Zenith Electronics Corp.

[190] Leslie Ellis, *Digital Tests Hearten Wireless Cable Execs*, Multichannel News, Mar. 13, 1995, at 6.

[191] *Test Results Positive For Digitally Compressed Wireless Cable*, Comm. Daily, Mar. 7, 1995, at 2.

[192] *Id.*

[193] Harry A. Jessell, *Wireless Cable Is Going Digital ... Or At Least Trying*, Broadcasting & Cable, July 24, 1995, at 30.

[194] Dow Jones & Co., *Wireless Cable Execs/Analysts Mull Industry Future*, Select Fed. Filings Newswires, July 20, 1995.

75. Independent of the WCDA's efforts, it has been reported that Decathlon Communications, Inc. ("Decathlon") has developed its own digital wireless cable technology based on MPEG 1+ encoding.[195] Transworld Telecommunications Inc. has announced plans to implement Decathlon's technology in its Tampa/St. Petersburg system.[196] American Telecasting has announced plans to install Decathlon's technology in its Fresno, California system by the end of 1995,[197] as has Sky Cable of Omaha.[198]

76. On July 13, 1995, a coalition of ninety-nine organizations with interests in the wireless cable industry filed a petition requesting a "declaratory ruling on the use of digital modulation by" stations using MDS and ITFS frequencies. On August 23, 1995, the Commission established a pleading cycle for that petition, with comments filed on September 22, 1995 and reply comments filed October 10, 1995.[199]

77. *Financial Performance.* The industry's total revenue for 1994 was $203 million, a 48% increase from 1993.[200] The industry's cash flow (as defined above in paragraph 27) declined during 1994, dropping from a loss of $10.6 million in 1993 to a loss of $14.2 million.

78. *Equity Markets.* In the ten months prior to June 1994, the wireless cable industry raised almost $600 million in financing from public markets.[201] In the following twelve months, the industry obtained $638 million of additional financing from both public and private sources. There are also $350 million of financing transactions awaiting

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[195] Denny Weddle, *Compression Breakthrough*, Private Cable & Wireless Cable, Oct. 1995, at 27. For a full discussion of digital compression technology, see Section III.C below.

[196] Transworld Telecommunications, Inc., *Transworld Telecommunications Inc. Announces Deployment of Decathlon Digital Compression System* (Business Wire), Aug. 1, 1995.

[197] American Telecasting, Inc., *American Telecasting Announces Agreement To Install Decathlon Digital Compression Technology In Fresno This Year* (PR Newswire), July 18, 1995.

[198] Fred Dawson, *Wireless Ops Make Move to Digital*, Multichannel News, Aug. 28, 1995, at 3.

[199] *Pleading Cycle Established For Comments On Request For Declaratory Ruling On The Use Of Digital Modulation By Multipoint Distribution Service And Instructional Television Fixed Service Stations*, Public Notice, Report No. MM 95-83, DA 95-1854 (Aug. 23, 1995).

[200] *1995 Wireless Cable Databook, supra*, at 23-24.

[201] Paul Kagan Assoc., Inc., Wireless Cable Investor, June 30, 1994, at 1.

consummation. Of this combined $988 million (excluding investments made by LECs), $725 million is in the form of public bond offerings.[202]

79. *LEC Investment.* An important development in the wireless cable industry this year has been the decision by three LECs to make major investments in two wireless operators. In March, 1995, Bell Atlantic and NYNEX made a substantial investment in CAI. Their initial investment in CAI was $100 million, and included the issuance of warrants, which would give them the opportunity to purchase 45% equity in CAI for an additional $300 million.[203] Helped by this infusion of capital, CAI acquired the systems mentioned above in paragraph 72.[204] In April 1995, PacBell acquired Cross Country for $175 million.[205]

80. *Recent Regulatory Developments.* In June 1995, the Commission took several actions to enhance the competitiveness of wireless cable systems and to facilitate the development and rapid deployment of wireless cable services. The Commission adopted streamlined measures to process new applications for MDS spectrum, adopted competitive bidding procedures for the licensing of MMDS spectrum and expanded the protected service area of MDS stations.[206]

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[202] Paul Kagan Assoc., Inc., *Wireless Cable Public and Private Funding, June 1994 Through May 1995*, Wireless Cable Investor, May 31, 1995, at 1: Paul Kagan Assoc., Inc., *Wireless Cable Public Bond Offerings*, Wireless Cable Investor, June 30, 1995, at 1.

[203] *1995 GKM Databook*, at 52 ("Seminal Event In Evolution of Wireless Cable Industry").

[204] LECs' use of wireless facilities to provide video programming is discussed in more detail *infra* Section II.D.

[205] The acquisition was finalized on July 25, 1995, Pacific Telesis Group, *Pacific Telesis Becomes Nation's First Telco To Offer Wireless Cable Television* (News Release), July 25, 1995.

[206] *Amendment of Parts 21 & 24 of the Commission's Rules with Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service*, Report & Order, MM Docket No. 94-131, 10 FCC Rcd 9569 (1995); *Amendment of Parts 21, 43, 74, 78, & 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, & Cable Television Relay Service*, Second Order on Reconsideration, Gen. Docket No. 90-54, 10 FCC Rcd 7074 (1995). We note that at least one operator complains that the current MMDS licensing process is said to be designed in a manner that favors LECs with their larger financial resources over the smaller entrepreneurs. Vermont Wireless Cooperative Comments at 1-2.

81. *Factors Affecting Competition.* Despite its recent gains, the wireless cable remains industry a relatively small provider of multichannel video services in terms of market share. As of the end of September 1995, only 0.8% of television households subscribed to wireless cable services, compared to 64.3% of television households subscribing to wired cable systems.

82. Various factors, including technological limitations (e.g., line-of-sight and channel capacity), have been blamed for the relatively low penetration of wireless cable systems.[207] Due to their relatively small size, wireless cable systems potentially face higher programming costs per-subscriber than many of their larger, wired cable system competitors. According to WCAI, several non-vertically integrated programmers engage in the practice of charging a wireless cable operator more than a similarly situated franchised cable system for programming.[208] Wireless cable operators also have been dealing with increased competition from DBS services, although some analysts believe that such competition has not had a substantial impact on wireless cable operators' subscribership (less than 0.1% of wireless cable subscribers have switched to DBS service).[209] One wireless cable operator alleges that predatory pricing by wired cable operators, including low promotional rates, reduces wireless cable operators' ability to compete.[210]

83. In addition to the recent progress on the technological front, wireless cable systems may enjoy lower per unit costs than wired cable systems when adding new subscribers. Investment analysts estimate the average investment per subscriber for wireless cable operators is between $330 and $600, compared with $625 to $1300 for traditional wired cable operators.[211] Moreover, WCAI believes that the wireless cable industry's cost of digitization will be lower, on a per subscriber basis, than the cost of digitization for the wired cable industry.[212] At least one analyst agrees with this view, reporting the investment per digital subscriber to be $900 for wireless operators, and $1500 for wired cable operators.[213]

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[207] Wireless Cable Overview, *supra*, at 12.

[208] WCAI Comments at 18. A similar concern is raised by the Small Cable Business Association (SCBA), which claims that small wired cable operators must pay substantially higher rates for programming than the large MSOs.

[209] Wireless Cable Sight-Lines, *supra*, at 8.

[210] Heartland Comments at 1-3.

[211] *1995 GKM Databook*, at 11 ("Wireless Cable Primer"); Wireless Cable Overview, *supra*, at 4.

[212] WCAI Comments at 15

[213] Wireless Cable Overview, *supra*, at 4.

2. *Local Multipoint Distribution Service*

84. LMDS frequencies are microwave channels in the 28 GHz band that may be used to deliver multichannel video programming. As with distribution using MMDS, LMDS distribution requires subscribers to have a special antenna that is located within a "line-of-sight" to the transmitter. The propagation characteristics of the 28 GHz band are such that an LMDS system must operate in "cells" with radii of three to six miles in order to provide service to a metropolitan area that could be covered by a single wireless cable transmitter. With the exception of CellularVision of New York, L.P.'s ("CellularVision") 5,300-subscriber LMDS system in Brooklyn, New York (which has been managed by Bell Atlantic),[214] LMDS frequencies are not currently being used to distribute video programming.[215]

85. In July 1995, the Commission issued a *Third Notice of Proposed Rulemaking and Supplemental Tentative Decision* seeking comment on: (1) a plan to allow both LMDS and Fixed Satellite Service ("FSS") systems to operate in the 28 GHz band; (2) a competitive bidding scheme for awarding mutually exclusive LMDS and FSS license applications by Basic Trading Areas ("BTAs"); and (3) flexible use of the 28 GHz spectrum band.[216] The Commission also sought comment on the number of LMDS licenses that should be made available in a particular market, and the amount of spectrum that should be allocated.[217] Given the potential for competition between LMDS and cable systems, we also requested comment whether to permit cable operators to acquire LMDS systems in their service areas. At this time, it remains unclear whether, and to what extent, LMDS systems might emerge as significant competitors to wired cable systems.

D. Local Exchange Carriers

86. Local exchange carriers ("LECs") are local telephone companies that operate in local service areas commonly known as local access and transport areas ("LATAs"). In the

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[214] CellularVision USA, Inc., *Form S-1* 3, 12 (Oct. 18, 1995). In a registration statement recently filed with the SEC, CellularVision discloses an "electronic manufacturing flaw in its set-top converters which degraded reception quality," and reported an average monthly subscriber cancellation rate of 10% through August 1995. CellularVision states that it has been installing repaired equipment that remedies the problem and has reduced the rate of cancellations. *Id.* at 11.

[215] This operation was authorized by the Commission in 1991 on a waiver basis. *Hye Crest Management, Inc. (For License Authorization in the Point-to-Point Microwave Radio Service in 27.5-29.5 GHz Band and Request for Waiver of the Rules)*, Memorandum Opinion and Order, 6 FCC Rcd 332 (1991). Other applications for LMDS service were subsequently frozen by the Commission.

[216] *Third 28 GHz NPRM*, __ FCC Rcd __, FCC 95-287.

[217] *Id.* ¶ 79.

1994 Report, the Commission noted an increase in LEC video related activity since the Commission's *1990 Cable Report*, spurred by the adoption of the video dialtone ("VDT") framework and technological advances.[218] In the year since the *1994 Report*, LEC plans for entry into the video marketplace have evolved considerably. At present, however, it is difficult to predict the level of future LEC entry into markets for the delivery of video programming over the long run, or the form that entry will take.

1. Commission and Judicial Actions

87. Shortly after release of the *1994 Report*, the Commission resolved the pending petitions for reconsideration of the *1992 VDT Order*.[219] In the *VDT Reconsideration Order*, the Commission affirmed its decision to enforce the statutory cable-telco cross-ownership prohibition, and generally affirmed the regulatory framework for VDT services.[220] However,

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[218] *1994 Report*, 9 FCC Rcd at 7495-505 ¶¶ 103-20. VDT is a regulatory framework that permits LECs to offer, on a nondiscriminatory basis, a basic common carrier video delivery platform that must accommodate multiple video programmers. First adopted by the Commission in 1992, this regulatory framework provides for LEC participation in the MVPD marketplace consistent with the statutory cable television company-local telephone company ("cable-telco") cross-ownership ban. This ban or restriction was enacted by the 1984 Cable Act, and prohibits a common carrier from providing video programming directly to subscribers in its telephone service area, either directly or indirectly through an affiliate owned by, operated by, controlled by, or under common control with the common carrier. *See Telephone Company-Cable Television Cross-Ownership Rules, Sections 63.54-63.58*, Second Report & Order, Recommendation to Congress, and Second Further Notice of Proposed Rulemaking, CC Docket No. 87-266, 7 FCC Rcd 5781 (1992), ("*1992 VDT Order*"), *aff'd in part and modified in part*, Memorandum Opinion & Order on Reconsideration and Third Further Notice of Proposed Rulemaking, 10 FCC Rcd 244 (1994), ("*VDT Reconsideration Order*" and "*VDT Third Further Notice*"), *appeal pending sub nom. Mankato Citizens Tel. Co. v. FCC*, No. 92-1404 (D.C. Cir. filed Sept. 9, 1992).

[219] *See VDT Reconsideration Order*, 10 FCC Rcd at 247 ¶ 1. In the *VDT Reconsideration Order*, the Commission also clarified and modified certain policies adopted in the *1992 VDT Order*, including policies pertaining to ownership and non-ownership affiliations, and to cross-subsidization and pricing issues.

[220] The Commission interpreted the statutory cable-telco cross-ownership ban as restricting LEC participation in the selection, pricing, or packaging of video programming for distribution to subscribers within its telephone service area. *VDT Reconsideration Order*, 10 FCC Rcd at 280-81 ¶¶ 73-74. As noted below, this restriction was subsequently eased in response to court orders enjoining the Commission from enforcing the cable-telco cross-ownership ban. In the *VDT Reconsideration Order*, the Commission clarified that, under the VDT framework, a LEC is precluded from acquiring a cable system that operates within its telephone service area, and a LEC cannot engage in joint ventures with in-region cable

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shortly thereafter two federal circuit courts of appeal held that the statutory cable-telco cross-ownership restriction was an unconstitutional infringement of telephone companies' First Amendment rights, and upheld lower court orders enjoining the Commission from enforcing the statutory restriction against parties to those cases.[221]

88. In response to those decisions and a number of similarly decided federal district court cases,[222] the Commission took a number of actions to clarify further the manner in which LEC entry into the MVPD and related markets would be regulated. In January 1995, the Commission issued another notice of proposed rulemaking seeking comment on, among other things, whether Title II or Title VI of the Communications Act, or some combination thereof, should apply to a LEC that, directly or indirectly through an affiliate, provides video programming over a VDT platform to subscribers within its local telephone service areas.[223]

89. In April 1995, the Commission clarified that it will not enforce the cable-telco cross-ownership restriction against: (1) any telephone company that is a party to any of the cases in which the Commission has been enjoined from enforcing the statutory cross-ownership ban; or (2) any telephone company operations that are within the geographic

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[220](...continued)
operators for purposes of providing video programming to subscribers within its telephone service area. *Id.* at 266 ¶ 48, 286-87 ¶ 89. In the *VDT Third Further Notice*, adopted concurrently with the *VDT Reconsideration Order*, the Commission sought comment on the viability of multiple wire based competitors in the MVPD marketplace, and on criteria for modifying the restrictions imposed on LEC acquisitions of, and joint ventures with, cable operators. *VDT Third Further Notice*, 10 FCC Rcd at 372-73 ¶¶ 276-79. The Commission also sought comment on: (1) capacity issues; (2) preferential access; and (3) pole attachment and conduit rights. This rulemaking remains pending before the Commission. *Id.* at 368-75 ¶¶ 268-285.

[221] *Chesapeake & Potomac Tel. Co. v. United States*, 830 F. Supp. 909 (E.D. Va. 1993), *aff'd*, 42 F.3d 181 (4th Cir. 1994), *cert. granted,* 115 S. Ct. 2608 (Jun. 26, 1995); *U S West, Inc. v. United States*, 855 F. Supp. 1184 (W.O. Wash. 1994), *aff'd*, 48 F.3d 1092 (9th Cir. 1995). *See also Pacific Telesis Group v. United States*, 48 F.3d 1106 (9th Cir. 1994).

[222] *See BellSouth Corp. v. United States*, 868 F. Supp 1335 (N.D. Ala. 1994), *appeal pending* No. 94-7036 (11th Cir. filed Oct. 28, 1994); *Ameritech Corp. v. United States*, 867 F. Supp 721 (N.D.Ill. 1994), *appeal pending* No. 94-7036 (11th Cir.); *NYNEX Corp v. United States*, No. 93-323PC, 1994 WL 779761 (D. Me. Dec. 8, 1994), *appeal pending* No. 95-1183 (1st Cir).; *Southern New England Tel. Co. v. United States*, 886 F. Supp. 211 (D. Conn. 1995); *GTE South, Inc. v. U.S.*, No. 94-1588-A (E.D., Jan. 13, 1995); *United States Tel. Ass'n v. United States*, No. 1:94CVO1961 (D.D.C. Feb. 14, 1995); *Southwestern Bell Corp v. United States*, Civ. A. No. 3:94-V-0193-D, 1995 WL 444414 (N.D. Tex. Mar. 27, 1995).

[223] *Telephone Co.-Cable Television Cross-Ownership Rules, §§ 63.54-63.58,* Fourth Further Notice of Proposed Rulemaking, CC Docket No. 87-266, 10 FCC Rcd 4617 (1995).

boundaries of the Fourth or Ninth Circuits, where the ban has been held unconstitutional.[224] In May 1995, the Commission determined that it has legal authority to grant waivers of the cable-telco cross-ownership ban to allow telephone companies to provide video programming on VDT networks in their telephone service areas.[225] In August 1995, the Commission streamlined the Section 214 process for LECs to construct stand alone cable systems within their local service areas.[226] Finally, over the course of the year, the Commission has established many of the reporting and accounting requirements applicable to the provision of VDT service.[227]

2. LEC Entry into MVPD and Program Supply Markets

90. In this section of the *1995 Report*, we examine the status of LEC entry into various video markets. First, we report on the status of LEC entry into what may be thought of as the video transport segment of the market for the delivery of video programming -- the provision by LECs of common carrier video transport services over VDT facilities to customer-programmers that distribute programming packages to end user subscribers. Second,

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[224] *Commission Announces Enforcement Policy Regarding Tel. Co. Ownership of Cable Television Sys.*, Public Notice, DA 95-722 (Apr. 3, 1995) (correcting Public Notice, DA 95-520 (Mar. 17, 1995)).

[225] *Telephone Co.-Cable Television Cross-Ownership Rules, §§ 63.54-63.58,* Third Report & Order, CC Docket No. 87-266, 10 FCC Rcd 7887 (1995).

[226] *Telephone Co.-Cable Television Cross-Ownership Rules*, §§ 63.54-63.58, Fourth Report & Order, CC Docket No. 87-266, __ FCC Rcd ____ , FCC 95-357 (Aug. 14, 1995), *summarized at* 60 Fed. Reg. 44280 (Aug. 25, 1995), *petition for review pending, Ameritech Corp. v. FCC*, No. 95-1423 (D.C. Cir. filed Aug. 18, 1995) and No. 95-1441 (DC Cir. filed Aug. 25, 1995); *GTE Serv. Corp. v. FCC*, No. 95-1488 (DC Cir. filed Sept. 22, 1995). The streamlined Section 214 procedures apply only to telephone companies that have obtained injunctions barring the Commission from enforcing the cable-telco cross-ownership ban. Telephone companies already had blanket Section 214 authority to operate cable systems outside their telephone service areas.

[227] *See, e.g.*, *RAO Letter 25*, DA 95-703, Mar. 31, 1995 (accounting order providing specific guidance on the requirements for accounting classifications, subsidiary records and amendment of cost allocation manuals for LECs that provide VDT service); *Price Cap Performance Review for Local Exchange Carriers; Treatment of Video Dialtone Services Under Price Cap Regulation*, Second Report & Order and Third Further Notice of Proposed Rulemaking, CC Docket No. 94-1, __ FCC Rcd ___ , FCC 95-394 (Sept. 21, 1995) (specific price cap regulations for VDT offerings); *Reporting Requirements on Video Dialtone Costs & Jurisdictional Separations for Local Exchange Carriers Offering Video Dialtone Services*, Memorandum Opinion & Order, AAD No. 95-59, __ FCC Rcd ____ , DA 95-2026 (Sept. 29, 1995), *summarized at* 60 Fed. Reg. 53544 (Oct. 16, 1995) (specifying the content and format of the VDT reports LECs must file when offering VDT service).

we address LEC entry into these markets through construction of, or investment in, traditional stand alone cable systems, wireless cable systems, and other integrated proprietary facilities that bundle video transport services with the provision of programming services to subscribers. Finally, we note instances of LEC entry into the video programming supply and packaging market.

91. *Status of VDT Technical and Market Trials.* At the time of the *1994 Report*, five applications for VDT technical and market trials had been granted, three applications for initial trials were pending, and two applications for expansion of existing trials were also pending. Since the *1994 Report*, no additional applications for VDT technical or market trials have been filed with the Commission. The three applications for new trials that were pending at the time of the *1994 Report* have all been granted.[228] In addition, three applications for expanded or extended trials have been granted.[229] Information pertaining to the VDT trial participants, the status of the trials, and results of market and technical tests are summarized in Appendix E.[230]

92. *Status of VDT Permanent Commercial Applications.* At the time of the *1994 Report*, twenty-three applications for permanent commercial VDT authorizations were pending before the Commission and one application to provide permanent commercial VDT service had been granted -- to Bell Atlantic for service to approximately 38,000 households in Dover

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[228] *See Puerto Rico Tel. Co. (P.R. VDT Trial)*, Order & Authorization, File No. WPC 6949, 10 FCC Rcd 156 (1994); *BellSouth Telecommunications, Inc. (Chamblee & DeKalb Cos., Ga. VDT Trial)*, Order & Authorization, File No. WPC 6977, __ FCC Rcd ___ , DA 95-181, 1995 WL 51206 (Feb. 2, 1995, CCB); *Carolina Tel. & Tel. Co. (Wake Forest, N.C. VDT Trial)*, Order & Authorization, File No. WPC 6999, 10 FCC Rcd 1583 (1995). *See also infra* Appendix E.

[229] These expansions or extensions are for Bell Atlantic's Northern Virginia trial, Southern New England Telephone Co.'s ("SNET") Connecticut trial, and U S West's Omaha, Nebraska trial. *See Chesapeake & Potomac Tel. Co. (No. Va. VDT Trial Expansion)*, Order & Authorization, 10 FCC Rcd 2975 (1995); *Southern New Eng. Tel. Co. (W. Hartford VDT Trial)*, Order & Authorization, 9 FCC Rcd 1019 (1993); *Southern New Eng. Tel. Co. (Expanded VDT Trial)*, Order and Authorization, 9 FCC Rcd 7715 (1994); *Southern New Eng. Tel. Co. (W. Hartford & Expanded VDT Trial Synchronization)*; Order, 10 FCC Rcd 4558 (1995); *U S West Communications, Inc. (Omaha, Neb. VDT Trial)*, Order & Authorization, 9 FCC Rcd 184 (1993); *U S West Communications, Inc. (Trial Modification)*, Order & Authorization, File No. WPC 6868, FCC 94-350 (Jan. 6, 1995), *on recon.*, FCC 95-141 1995 WL 220632 (April 12, 1995).

[230] See also the discussion below for more information on architectures and technologies. *Infra* sec. III.C.

Township, New Jersey ("Dover").[231] Those applications represented a potential market for VDT services of over 8.5 million homes.[232]

93. Since release of the *1994 Report*, fifteen of the twenty-three applications for permanent commercial VDT authority have been granted (two to NYNEX, four to PacBell, four to GTE, and five to Ameritech); two applications were withdrawn (by Bell Atlantic); the processing of five applications has been suspended (at the request of U S West); and one application remains pending (by Bell Atlantic).[233] In addition, five new applications to provide commercial VDT service have been filed with the Commission since the 1994 *Report*. Of these five applications, four (filed by U S West) were dismissed by the Commission for insufficient data.[234] The fifth new application (filed by Southern New England Telephone Company ("SNET")) remains pending.[235]

94. Consequently, a total of sixteen applications for commercial VDT service have been approved, and two applications for commercial VDT service remain pending before the Commission. The status of the approved applications for permanent commercial VDT authorization is as follows:[236]

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[231] *See New Jersey Bell Tel. Co. (Application for Authority to Offer VDT Service in Dover Township, N.J.)*, Order & Authorization, File No. WPC 6840, 9 FCC Rcd 3677 (1994). *See also infra* Appendices D, E.

[232] *1994 Report*, 9 FCC Rcd at 7496 ¶ 104.

[233] The pending Bell Atlantic application is for authority to offer permanent commercial service to 11,700 homes. *New Jersey Tel. Co. (Florham Park, New Jersey VDT App. for Permanent Service)*, File No. WPC 6838 (filed Nov. 16, 1992).

[234] *U S West, Communications, Inc. (App. to Offer VDT Service in Cedar Rapids, Iowa)*, File No. WPC 7024 (filed Nov. 16, 1994) (passing 63,000 homes); *U S West Communications, Inc. (App. to Offer VDT Service in Colo. Springs, Colo.)*, File No. WPC 7025 (filed Nov. 16, 1994) (passing 161,000 homes); *U S West Communications, Inc. (App. to Offer VDT Service in Des Moines, Iowa)*, File No. WPC 7026 (filed Nov. 16, 1994) (passing 120,000 homes); *U S West Communications, Inc. (App. to Offer VDT Service in Albuquerque, N.M.)*, File No. WPC 7027 (filed Nov. 16, 1994) (passing 214,000 homes). On December 23, 1994, the Commission dismissed these applications for lack of information. *See* Letter from Kathleen M.H. Wallman, Chief, Common Carrier Bureau, FCC to Lawrence E. Sarjeant, U S West Communications, Inc. (Dec. 23, 1994).

[235] *Southern New Eng. Tel. Co. (Connecticut VDT Application for Permanent Service)*, File No. WPC 7074 (filed Apr. 28, 1995).

[236] A chart is provided in the appendices summarizing the current status of all of the VDT applications for commercial service that have been filed with the Commission (omitting

(continued...)

- Bell Atlantic's July 1994 authorization for a VDT system in Dover Township, New Jersey, that will pass 38,000 homes.[237] The tariff for this system was permitted to become effective following a one-day suspension, subject to investigation.[238] This VDT system is scheduled to begin service in 1995, and is expected to become the first permanent commercial VDT system in operation.[239]

- NYNEX's March 1995 authorization for two VDT systems, one in Rhode Island that will pass 63,000 homes and one in eastern Massachusetts that will pass 334,000 homes. NYNEX's applications, filed in July of 1994, proposed completion of construction in 2010.[240] According to some trade press accounts, NYNEX is proceeding on target with a "cautiously aggressive" strategy with its VDT systems in eastern Massachusetts and Rhode Island.[241] Earlier reports suggested, however, that while still pursuing VDT entry, NYNEX had scaled back its deployment plans and may utilize wireless cable in the near term to reach subscribers while constructing its VDT systems.[242]

- PacBell's August 1995 authorization for four VDT systems in California, which will pass 490,000 homes in San Francisco; 360,000 homes in Los Angeles; 259,000 homes in San Diego; and 210,000 homes in Orange County, California. PacBell's applications, originally

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[236](...continued)
the four U S West applications that were filed and dismissed since the *1994 Report*). *Infra* Appendix C-1.

[237] *New Jersey Bell Tel. Co.*, 9 FCC Rcd 3677. *See also infra* Appendix E.

[238] *The Bell Atl. Tel. Cos. (Waiver of Part 69 to Offer VDT service in Dover Township, N.J.)*, Order, DA 95-1282 (June 9, 1995). *See also Bell Atlantic Tel. Cos., Tariff F.C.C. No. 10, Transmittal Nos. 741, 786*, Order Designating Issues for Investigation, CC Docket No. 95-145, __ FCC Rcd ___ , DA 95-1928 (Sept. 8, 1995) (rates, terms and requirements for VDT service in Dover Township).

[239] *See Launch Delayed*, Comm. Daily, Aug. 16, 1995, at 5.

[240] *New Eng. Tel. & Tel. Co. (VDT Serv. Auth. to Communities in R.I. & Mass.)*, Order & Authorization, File No. WPC 6982, 10 FCC Rcd 5346, 5349 ¶ 5 (1995).

[241] *NYNEX Intrigued, but Wary, of VDT Opportunity*, Washington Telecom News, Sept. 25, 1995, at 5; *NYNEX Plans a Common Carriage Model for VDT*, Washington Telecom News, June 19, 1995, at 14.

[242] *1995 GKM Databook, supra*, at 33-34.

filed in December 1993, proposed an advanced, wire based video and telephone network that would be constructed sometime in 1996 at an expense of approximately $16 billion.[243] It appears that PacBell currently plans to pass only 500,000 homes with this advanced network in 1996, increasing to one million homes in 1997.[244] These reports suggest, however, that PacBell is accelerating construction of the VDT network in the San Francisco Bay Area, scaling back its VDT deployment plans in its other authorized areas, and deploying wireless facilities in those areas in the near term while building out the VDT systems.[245]

- GTE's May 1995 authorization for four VDT systems that will pass 476,000 homes in Pinellas and Pasco, Florida; 334,000 in Honolulu, Hawaii; 122,000 in Ventura, California; and 109,000 in Manassas, Virginia.[246] Reportedly, GTE is aggressively moving ahead with its VDT plans. By the end of 1996, GTE reportedly plans to pass a total of 500,000 homes in three markets: Ventura, California; Pasco and Pinellas counties, Florida; and Honolulu, Hawaii. By 1997, GTE reportedly plans to enter the Manassas, Virginia market, increasing its total homes passed to 900,000 homes in all four markets.[247] GTE states that its goal is to pass seven million homes with VDT in 66 top markets within the next ten years.[248]

- The remaining five applications for permanent commercial VDT

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[243] *Pacific Bell Co. (VDT Serv. Auth. for Communities in Orange Co., S.F. Bay Area, L.A. Area & S.D. Area in Cal.)*, Order & Authorization, File Nos. WPC 6913 *et al.*, __ FCC Rcd ___ , FCC 95-302 (Aug. 15, 1995).

[244] *See* Pacific Telesis, *Pacific Telesis Refines Network & Video Strategy* (News Release), Sept. 27, 1995; Leslie Cauley, *PacTel Puts Off Interactive-Video Plans, Concentrating Instead on Wireless Cable*, Wall St. J., Sept. 28, 1995, at A3; John M. Higgins, *PacTel Finds Video Plans Too Ambitious*, Multichannel News, Oct. 2, 1995, at 1, 52.

[245] *1995 GKM Databook*, *supra*, at 33-34.

[246] *Contel of Va., Inc. (VDT Serv. Auth. for Communities in Va., Fla., Ca. & Haw.)*, Order & Authorization, File Nos. WPC 6955 *et al.*, __ FCC Rcd ___ , DA 95-1012 (May 5, 1995, CCB).

[247] *GTE to Have Video Dialtone Nets in 3 Markets by Year End*, Computergram Int'l, May 10, 1995; Mark Berniker, *GTE's Video Dialtone Gets FCC Green Light*, Telemedia Week, May 8, 1995, at 76.

[248] Berniker, *supra*, at 76.

authority were granted to Ameritech in January 1995 for five systems that proposed to pass 232,000 homes in Detroit, Michigan; 501,000 homes in Chicago, Illinois; 115,000 homes in Indianapolis, Indiana; 262,000 in homes in Cleveland and Columbus, Ohio; and 146,000 homes in Milwaukee, Wisconsin.[249] After obtaining these authorizations, Ameritech decided to pursue entry into the MVPD marketplace through stand alone cable systems, rather than VDT systems.[250]

95. As noted above, seven of the Section 214 applications for permanent commercial VDT authority that were pending at the time of the *1994 Report* have been withdrawn or suspended by the applicant. These seven applications represented a potential market of over 4.3 million homes passed by VDT. The disposition of these applications includes the following:

- On May 24, 1995, Bell Atlantic withdrew two applications for permanent commercial VDT systems that proposed to pass 1.2 million homes in the D.C. LATA and 2 million homes in the mid-Atlantic area.[251] Bell Atlantic announced that it was considering new technologies and would submit amended applications at a later date, after further evaluating the technologies.[252] Press reports suggest that in the D.C. and mid-Atlantic regions, Bell Atlantic plans to use wireless technology pending further development of switched digital video ("SDV") architecture.[253] Notwithstanding its withdrawal of two significant VDT proposals, Bell Atlantic is going forward with VDT in other areas, including the construction of a permanent commercial VDT operation in Dover.

- On May 31, 1995, U S West requested suspension of further Commission consideration of the five applications it filed in January and

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[249] *Ameritech Operating Cos. (VDT Serv. Auth. for Communities in Ill., Ind., Mich., Ohio & Wis.)*, Order & Authorization, File No. WPC 6926, 10 FCC Rcd 4104 (1995).

[250] *See infra* Appendix C-2.

[251] *E.g.*, Bell Atlantic Co., *Bell Atlantic Moves to Deploy Full Service Network with Latest Digital Technology* (News Release), May 24, 1995; *Bell Atlantic Asks FCC to Suspend 2 VDT Reviews,* Comm. Daily, Apr. 26, 1995, at 1; *Bell Atlantic Drops VDT Applications*, Comm. Daily, May 25, 1995, at 2.

[252] *Bell Atlantic Moves to Deploy Full Service Network, supra.*

[253] *Id.*; *Bell Atlantic Picks Wireless Cable Video Solution*, Comm. Daily, May 18, 1995, at 4. See the discussion below for more information on SDV. *Infra* sec. III.C.

March 1994, which proposed permanent commercial VDT service to 1.1 million homes, including 90,000 homes in Boise, Idaho; 357,000 homes in Denver, Colorado; 357,000 homes in Minneapolis, Minnesota; 162,000 homes in Portland, Oregon; and 160,000 homes in Salt Lake City, Utah.[254] U S West stated that it wanted time to review results of its Omaha, Nebraska market trial and to study new technologies.[255]

96. Thus, in addition to Bell Atlantic's Dover VDT system, the available data indicates that four LECs, Bell Atlantic, PacBell, GTE, and NYNEX, are entering or planning to enter the MVPD marketplace as VDT operators in a total of eleven markets that range in size from 63,000 to 490,000 homes passed. These eleven permanent VDT systems represent potential VDT service to approximately 2.5 million homes passed.

97. *LEC Entry Into the MVPD Marketplace Through Cable and Wireless Facilities.* Several LECs have indicated an interest in providing cable service in their telephone service areas. For example, as noted above, Ameritech is pursuing entry through construction of cable systems, and has sought and obtained from local cable franchising authorities and the Commission authority to construct cable systems in Plymouth, Canton and Northville Townships in Michigan (near Detroit);[256] in Columbus, Ohio; and in Glendale Heights, Illinois

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[254] *See Application of U S West Communications, Inc. (Application for Permanent Commercial VDT Serv. in Denver, Colo.)*, File No. WPC 6919 (filed Jan. 10, 1994); *Applications of U S West Communications, Inc. (Application for Permanent Commercial VDT Serv. in Portland, Or. & Minneapolis, Minn.)*,File Nos. WPC 6921, WPC 6922 (filed Jan. 19, 1994); *Applications of U S West Communications, Inc. (Application for Permanent Commercial VDT Serv. in Boise, Idaho & Salt Lake City, Utah)*, File Nos. WPC 6944, WPC 6945 (filed Mar. 16, 1994).

[255] *See U S West Asks FCC to Suspend Action on VDT Applications Pending Test Results*, Comm. Daily, June 1, 1995, at 1.

[256] On August 14, 1995, the FCC proposed fining Ameritech $200,000 for beginning construction of the Plymouth Township system without prior Section 214 authority. *Ameritech Corp.*, Notice of Apparent Liability for Forfeiture and Order to Show Cause, File No. ENF 95-13, __ FCC Rcd ___ , FCC 95-356 (Aug. 14, 1995). On August 16, 1995, in compliance with the Notice of Apparent Liability for Forfeiture and Order to Show Cause, Ameritech sought temporary and permanent Section 214 authorizations to construct, operate, own and maintain cable facilities within Plymouth Township, Michigan. The Common Carrier Bureau granted Ameritech's request for Section 214 temporary authority that same day. *Ameritech New Media Enters. (STA to Operate Cable Facilities in Plymouth Twshp., Mich.)*, Order & Authorization, File No. WPC 7099, __ FCC Rcd ___ , DA 95-1819 (Aug. 16, 1995, CCB). Shortly thereafter, Ameritech appealed, on First Amendment grounds, the Commission's Fourth Report and Order in CC Docket No. 87-266 streamlining the Section 214 procedural requirements for a telephone company seeking authority to construct a

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(near Chicago).[257] Ameritech plans to begin offering stand alone cable services in 1996 and to complete its cable systems by early 1997.[258] SBC has received Commission approval for a temporary market trial of cable service in Richardson, Texas.[259] BellSouth has applied to provide cable service in Daniel Island, South Carolina.[260] In addition, four smaller LECs -- MebCom Telephone Company, Hargray Telephone Company, Inc., Bluffton Telephone Company, and Kingsgate Telephone, Inc. -- have obtained authority to provide stand alone cable service, pursuant to the Commission's streamlined Section 214 review.[261]

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[256](...continued)
cable television system within its service area. *See Ameritech Corp. v. FCC*, No. 95-1423 (D.C. Cir. filed Aug. 18, 1995); *Ameritech Corp. v. FCC*, No. 95-1441 (D.C. Cir. filed Aug. 25, 1995). *See also United States Tel. Ass'n v. FCC*, No. 95-533-A (E.D. Va. filed July 31, 1995) (also challenging the Section 214 requirement on First Amendment grounds).

[257] Ameritech has received Commission approval of streamlined Section 214 applications to provide stand alone cable service in each of these five areas. *See Ameritech New Media Enterps.*, Order & Authorization, File No. WPC 7099, __ FCC Rcd ___ , DA 95-1819 (Aug. 16, 1995, CCB); *Ameritech New Media Enters. (Columbus, Ohio)*, Order, File No. WPC 7106, __ FCC Rcd ___ , DA 95-2067, 1995 WL 574393 (Sept. 28, 1995, CCB); *Ameritech New Media Enters. (Plymouth Twshp, Canton, Plymouth & Northville, Mich., and Glendale Heights, Ill.)*, File Nos. WPC 7099, WPC 7103, WPC 7104, WPC 7105 & WPC 7107, *deemed approved*, in Federal Communications Commission, *Commission Action on Common Carrier Bureau Domestic Facilities Applications*, Report No. D-819-A, Public Notice No. 55978 (Sept. 27, 1995).

[258] *See Plymouth Twp., Mich., Becomes First to Grant Cable Franchise to Ameritech*, Comm. Daily, June 29, 1995 at 2; *Ameritech's Cable Plans Hit a Snag in Illinois*, Cable World, Sept. 30, 1995, at 1, 76; Ted Hearn, *Ameritech Takes Cable Plunge*, Multichannel News, Nov. 6, 1995, at 3.

[259] *Southwestern Bell Video Servs. (Application to Temporarily Provide Cable Service to Richardson, Tex.)*, File No. WPC 7088, *deemed approved*, Federal Communications Commission, *Commission Action on Common Carrier Bureau Domestic Facilities Applications*, Report No. D-812-A, Public Notice No. 55205 (Aug. 9, 1995).

[260] *BellSouth Co. (Application for Authority Pursuant to 47 C.F.R. § 63.01 to Offer Cable Service in Daniel Island, S.C.)*, File No. WPC 7093 (filed July 19, 1995).

[261] *See MebCom, Inc. (Application for § 63.16 Approval for Cable Facilities to Serve Mebane, Alamance and Orange Co., NC)*, File No. WPC 7068, *deemed approved*, Federal Communicaions Commision, *Commission Action on Common Carrier Bureau Domestic Facilities Applications*, Report No. D-819-A, Public Notice No. 55978 (Sep. 27, 1995); *Hargray Tel. Co. (Application for § 63.16 Approval for Cable Facilities to Serve Portions of Beaufort Co. & Jasper Co., S.C.)*, File No. WPC 7059, *deemed approved*, Federal
(continued...)

98. Other LECs are pursuing entry into markets for the delivery of video programming through investments in, and acquisitions of, wireless providers. CAI, in which, as noted above, Bell Atlantic and NYNEX have invested, has wireless systems located in both Bell Atlantic's and NYNEX's local telephone service areas.[262] Cross Country, which, as noted above, was recently acquired by PacBell, has wireless systems in PacBell's local telephone service area.[263] The extent to which these LEC's plans are intended to be a transitional means of entering the MVPD market pending development of a wireline distribution system, or are intended to be complementary to or a substitute for such entry, remains unclear.

99. *LEC Entry into Video Programming.* In addition to offering video transport services, LECs have also entered into a number of joint ventures to produce and package video programming. As noted in the *1994 Report*, several LECs had already entered into ventures with programmers.[264]

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[261](...continued)
Communications Commission, *Common Carrier Network Services Division*, Public Notice No. 60214 (Oct. 16, 1995); *Bluffton Tel. Co. (Application for § 63.16 Approval for Cable Facilities to Serve Portions of Beaufort Co., S.C.)*, File No. WPC 7058, *deemed approved* Federal Communications Commission, *Common Carrier Bureau Network Services Division*, Public Notice No. 60214 (Oct. 16, 1995); *Kingsgate Tel. Co. (Application for § 63.16 Approval for Cable Facilities to Serve Harris Co., Tex.)*, File No. WPC 7118, *deemed approved*, Federal Communications Commission, *Common Carrier Bureau Network Services Division*, Public Notice No. 60287 (Oct. 20, 1995).

[262] CAI's wireless systems located in Bell Atlantic's local telephone service area include Philadelphia, Washington, D.C., Pittsburgh, Baltimore and Norfolk/Virginia Beach. Bell Atlantic would be able to pass four million households in those markets through CAI's wireless systems. CAI's wireless systems located in NYNEX's local telephone service area include New York, Boston, Long Island, Buffalo, Providence, Albany and Syracuse. In addition, CAI has wireless systems in Cleveland, Hartford, Rochester, Stockton/Modesto and Bakersfield. *See* CAI Wireless Systems, Inc., *Prospectus* 5 (Sept. 21, 1995). For more detail on the CAI-NYNEX/Bell Atlantic transaction, see the discussion above. *Supra* sec. II.C.1.

[263] *See* Pacific Telesis Group, *Pacific Telesis Becomes Nation's First Telco to Offer Wireless Cable Television* (News Release), July 25, 1995. *See also supra* sec. II.C.1; John M. Higgins, *PacTel Finds Video Plans Too Ambitious,* Multichannel News, Oct. 2, 1995, at 1, 52. PacBell reportedly expects to reach five million homes with wireless cable by 1997. Leslie Cauley, *PacTel Puts Off Interactive-Video Plans, Concentrating Instead on Wireless Cable*, Wall St. J., Sept. 28, 1995, at A3.

[264] *1994 Report*, 9 FCC Rcd at 7498 ¶ 107 n.305. In September 1993, U S West invested $2.5 billion in Time Warner Entertainment Company L.P. According to U S West, the alliance is to provide information services, telephone, and entertainment over Time Warner's cable systems in 29 markets outside of U S West's telephone service area. *U S*
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100. In October 1994, Bell Atlantic, NYNEX, and PacTel announced the formation of a joint venture, since named Tele-TV, to provide interactive video networks. One part of the venture will produce content for the LEC's distribution facilities and the other will develop technical systems.[265] In April 1995, Ameritech, BellSouth, and SBC announced an alliance with Disney Corporation to develop and package video programming and interactive services.[266] On August 10, 1995, GTE joined this group.[267]

3. Conclusions

101. When the *1994 Report* was released, there had been no actual entry by LECs, beyond VDT trials, into multichannel video programming distribution markets in their local telephone service areas. However, large scale wire-based entry by LECs in the near term, primarily through the construction of VDT systems, was widely anticipated. As noted in the *1994 Report*, if granted and constructed, the VDT applications pending at that time would have allowed service to approximately 8.5 million houses, which is nearly ten percent of the nation's television households.[268]

102. Since the *1994 Report*, some LECs appear to be reassessing their options for entry into the MVPD marketplace within their local telephone service areas. While some LECs intend to pursue construction and operation of permanent VDT systems, other LECs are also considering wireless technology and stand alone cable systems. It appears that, in the aggregate, currently authorized VDT facilities of four LECs (Bell Atlantic, NYNEX, GTE, and PacBell) would allow service to approximately 2.5 million homes in eleven markets. However, considering all modes of entry into MVPD markets, LEC plans may have not declined in terms of markets entered and the number of homes passed. At least three LECs (PacBell, NYNEX and Bell Atlantic) appear to have increased their respective overall number of homes passed by adding wireless technologies to their entry plans. Other LECs (including U S West, SBC, Bell South, Ameritech and several smaller LECs) have entered, or are

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[264](...continued)
West 1994 Annual Report, 10 (1994). In late 1993, NYNEX invested $1.2 billion in Viacom with the aim of jointly developing video on demand and interactive services. Jennifer L. Schenker, *NYNEX Raised Profile*, CMP, Mar. 20, 1995, at 26-28.

[265] Bell Atlantic, *Bell Atlantic, NYNEX, and Pacific Telesis Partner to Create Next Generation of Home Entertainment and Information Services; Creative Artists Agency Allied with Telephone Companies* (News Release) Oct. 31, 1994.

[266] SBC Communications Inc., *Disney, Ameritech, BellSouth and SBC Launch Home Entertainment Partnership* (News Release) April 18, 1995.

[267] Ameritech Corp., *GTE To Join Disney, Ameritech, BellSouth and SBC in Home Entertainment Partnership* (News Release) Aug. 10, 1995.

[268] *1994 Report*, 9 FCC Rcd at 7496 ¶ 104.